Lighting: Elimination of Controls Credits

Description
With the changes required by AB 970, automatic shut-off controls were made mandatory for all nonresidential buildings, effectively meaning that ALL spaces will be controlled by motion sensors, time clocks (including building automation), or timer devices.
The controls credits in the *Standards* aimed to use wattage incentives to encourage the use of these automatic control devices. Now that the controls devices are mandatory, the incentive is not needed and the control credits for these measures will be eliminated. However, controls credits would continue to be used as incentives for underutilized controls, such as fluorescent and HID dimming, demand limiting devices, and automatic daylighting systems.

Benefits
This measure would promote lower lighting power density. In addition to other reductions, a motion sensor currently permits a 20% net power reduction from the connected load in a small space, and a 10% reduction in a larger space. By eliminating these controls credits, designers would have to design lighting systems whose actual Lighting Power Density (LPD) meets the requirement.

Environmental Impact
This change will produce a net reduction in connected lighting power of up to 15%, which is the current amount of power these controls credits permit for automatic lighting controls versus manual only controls.

Type of Change
This mandatory measure change would need to be described in the Standards and Manuals.

Measure Availability and Cost
This measure should have no significant cost and, in fact, may promote savings by reducing lighting equipment costs.

Useful Life, Persistence and Maintenance
This measure will not change the existing life and maintenance of these systems. The energy savings related to this measure will persist.

Performance Verification
Not Applicable

Cost Effectiveness
This measure will result in the use of either less lighting equipment, or more advanced technology, e.g. T-5 instead of standard T-8 light sources. The energy savings can be tested against the added costs for the latest generation of lamp and ballast technology.

Analysis Tools
It is recommended that various designs using T-8, T-5, HID, and other light sources be analyzed for energy use and life-cycle costs to ensure the cost effectiveness of this measure. There is no need to analyze energy savings.

Relationship to Other Measures
If this measure is included, it is recommended that reductions in all LPD values (Tables 1-M, 1-N, etc.) not be made solely on the basis of T-8/T-5 system efficacy improvements.

Bibliography and Other Research

ASHRAE/IES 90.1 adopted this approach due to the advancement of lighting controls. The *EPRI Lighting Controls Patterns* book demonstrates the effectiveness of this method and the *Advanced Lighting Guidelines* confirms the increased systems efficacies.